

## OFFICE OF SCIENCE AND TECHNOLOGY POLICY

**ACTION:** Notice of Request for Information (RFI).

**SUMMARY:** The purpose of this Request for Information (RFI) is to solicit input from all interested parties regarding recommendations for the development of a National Plan for Civil Earth Observations (“National Plan”). The public input provided in response to this Notice will inform the Office of Science and Technology Policy (OSTP) as it works with Federal agencies and other stakeholders to develop this Plan.

**DATES:** Responses must be received by December 6, 2013 to be considered.

**SUBMISSION:** You may submit comments by any of the following methods.

- **Downloadable form:** To aid in information collection and analysis, OSTP encourages responses to be provided using this form. Please enter your responses in the fillable fields that follow the questions below.
- **Email:** OSTP encourages respondents to email the completed form, as an attachment, to [earthobsplan@ostp.gov](mailto:earthobsplan@ostp.gov). Please include “National Plan for Civil Earth Observations” in the subject line of the message.
- **Fax:** (202) 456-6071.
- **Mail:** Office of Science and Technology Policy, 1650 Pennsylvania Avenue, NW, Washington, DC, 20504. Information submitted by postal mail should allow ample time for processing by security.

Response to this RFI is voluntary. Respondents need not reply to all questions listed. Each individual or institution is requested to only submit one response. Responses to this RFI, including the names of the authors and their institutional affiliations, if provided, may be posted on line. OSTP therefore requests that no business proprietary information, copyrighted information, or personally-identifiable information be submitted in response to this RFI. Given the public and governmental nature of the National Plan, OSTP deems it unnecessary to receive or to use business proprietary information in its development. Please note that the U.S. Government will not pay for response preparation, or for the use of any information contained in the response.

### FOR FURTHER INFORMATION CONTACT:

Timothy Stryker, 202-419-3471, [tstryker@ostp.eop.gov](mailto:tstryker@ostp.eop.gov), OSTP.

## SUPPLEMENTARY INFORMATION:

### Background

The U.S. Government is the world's largest single provider of civil environmental and Earth-system data. These data are derived from Earth observations collected by numerous Federal agencies and partners in support of their missions and are critical to the protection of human life and property; economic growth; national and homeland security; and scientific research. Because they are provided through public funding, these data are made freely accessible to the greatest extent possible to all users to advance human knowledge, to enable industry to provide value-added services, and for general public use.

Federal investments in Earth observation activities ensure that decision makers, businesses, first responders, farmers, and a wide array of other stakeholders have the information they need about climate and weather; natural hazards; land-use change; ecosystem health; water; natural resources; and other characteristics of the Earth system. Taken together, Earth observations provide the indispensable foundation for meeting the Federal Government's long-term sustainability objectives and advancing the Nation's societal, environmental, and economic well-being.

As the Nation's capacity to observe Earth systems has grown, however, so has the complexity of sustaining and coordinating civil Earth observation research, operations, and related activities. In October 2010, Congress charged the Director of OSTP to address this challenge by producing and routinely updating a strategic plan for civil Earth observations (see *National Aeronautics and Space Administration Authorization Act of 2010, Public Law 111-267, Section 702*).

Responding to Congress, in April 2013, OSTP released a [National Strategy for Civil Earth Observations](#) ("the National Strategy").

In April 2013, OSTP also re-chartered the U.S. Group on Earth Observations (USGEO) Subcommittee of the National Science and Technology Council's Committee on Environment, Natural Resources, and Sustainability. USGEO will carry out the National Strategy and support the formulation of the National Plan.

As requested by Congress, the National Plan is being developed by USGEO to advise Federal agencies on the Strategy's implementation through their investments in and operation of civil Earth observation systems. The Plan will provide a routine process, on a three-year cycle, for assessing the Nation's Earth observation investments; improving data management activities; and enhancing related interagency and international coordination. Through this approach, the Plan will seek to facilitate stable, continuous, and coordinated Earth observation capabilities for the benefit of society.

Congress also requested that development of the National Plan include a process for collecting external independent advisory input. OSTP is seeking such public advisory input through this RFI. The public input provided in response to this Notice will inform OSTP and USGEO as they work with Federal agencies and other stakeholders to develop the Plan.

## Definitions and Descriptions

The term “**Earth observation**” refers to data and information products from Earth-observing systems and surveys.

“**Observing systems**” refers to one or more sensing elements that directly or indirectly collect observations of the Earth, measure environmental parameters, or survey biological or other Earth resources (land surface, biosphere, solid Earth, atmosphere, and oceans).

“**Sensing elements**” may be deployed as individual sensors or in constellations or networks, and may include instrumentation or human elements.

“**Observing system platforms**” may be mobile or fixed and are space-based, airborne, terrestrial, freshwater, or marine-based. Observing systems increasingly consist of integrated platforms that support remotely sensed, *in-situ*, and human observations.

## Assessing the Benefits of U.S. Civil Earth Observation Systems

To assist decision-makers at all levels of society, the U.S. Government intends to routinely assess its wide range of civil Earth observation systems according to the ability of those systems to provide relevant data and information about the following Societal Benefit Areas (SBAs):

- Agriculture and Forestry
- Biodiversity
- Climate
- Disasters
- Ecosystems (Terrestrial and Freshwater)
- Energy and Mineral Resources
- Human Health
- Ocean and Coastal Resources and Ecosystems
- Space Weather
- Transportation
- Water Resources
- Weather

The U.S. Government also intends to consider how current and future reference measurements (*e.g.*, bathymetry, geodesy, geolocation, topography) can enable improved observations and information delivery.

To address measurement needs in the SBAs, the U.S. Government operates a wide range of atmospheric, oceanic, and terrestrial observing systems. These systems are designed to provide: (a) sustained observations supporting the delivery of services, (b) sustained observations for research, or (c) experimental observations to address specific scientific questions, further technological innovation, or improve services.

## Questions to Inform Development of the National Plan

**Name (optional): James Stalker**

**Position (optional): Chairman**

**Institution (optional): The American Meteorological Society Nationwide Network of Networks (NNoN)**

Through this RFI, OSTP seeks responses to the following questions:

- Are the 12 SBAs listed above sufficiently comprehensive?
  - Should additional SBAs be considered?
  - Should any SBA be eliminated?
- Are there alternative methods for categorizing Earth observations that would help the U.S. Government routinely evaluate the sufficiency of Earth observation systems?
- NNoN made several recommendations that may be helpful to review (see AMS BAMS article and the references therein at <http://journals.ametsoc.org/doi/abs/10.1175/1520-0477-94.10.1602>).
- What management, procurement, development, and operational approaches should the U.S. Government employ to adequately support sustained observations for services, sustained observations for research, and experimental observations? What is the best ratio of support among these three areas?
- The NNoN report and the original NRC report made several recommendations that may be helpful to the Government. For example, one of the key recommendations made is to convene a nationwide stakeholders Summit. This Summit will benefit from attendance by all stakeholders, including the Government. NNoN is planning such a grand Summit in 2015 (time/place to be determined), with two mini summits to precede it (mini summit #1 held in August 2013 in

Boulder, CO; mini summit #2 in August 2014--place to be determined). Another key recommendation made is to seek full coordination among all stakeholders to maximize diminishing financial resources found available within already constrained budgets.

- Since non-government networks will also play a critical role, the AMS NNoN may offer additional benefits to this national effort, with respect to roadmap development and implementation.
- How should the U.S. Government ensure the continuity of key Earth observations, and for which data streams (e.g., weather forecasting, land surface change analysis, sea level monitoring, climate-change research)?
- One of the three tasks NNoN is engaging in is implementation support to its network members. Perhaps, the Government can join this committee and support the committee efforts financially or otherwise to fulfill its goals of roadmap development and implementation support. Please get in touch with James Stalker, Chairman, at [jrstalker@resspr.com](mailto:jrstalker@resspr.com).
- Are there scientific and technological advances that the U.S. Government should consider integrating into its portfolio of systems that will make Earth observations more efficient, accurate, or economical? If so, please elaborate.
- Technological advance: Big data analytics systems. Outputs from observing systems can be optimized to a greater extent and related quickly to societal and economic impacts through the leveraging of big data analytics systems to mine, fuse and cull insights in real time to quickly identify actionable knowledge that feed real time decision support systems.
- How can the U.S. Government improve the spatial and temporal resolution, sample density, and geographic coverage of its Earth observation networks with cost-effective, innovative new approaches?
- Please see the report referred to in the AMS BAMS article.
- Are there management or organizational improvements that the U.S. Government should consider that will make Earth observation more efficient or economical?
- Can advances in information and data management technologies enable coordinated observing and the integration of observations from multiple U.S. Government Earth observation platforms?
- Again, certain metadata and architecture standards are being developed by the AMS NNoN committee. The Government can benefit by joining the committee.
- What policies and procedures should the U.S. Government consider to ensure that its Earth observation data and information products are fully discoverable, accessible, and useable?
- See the report mentioned in the BAMS article.

- Are there policies or technological advances that the U.S. Government should consider to enhance access to Earth observation data while also reducing management redundancies across Federal agencies?
- What types of public-private partnerships should the U.S. Government consider to address current gaps in Earth observation data coverage and enhance the full and open exchange of Earth observation data for national and global applications?
- Some ideas along the lines of the above have been put forth in the AMS BAMS article (<http://journals.ametsoc.org/doi/abs/10.1175/1520-0477-94.10.1602>).
- What types of interagency and international agreements can and should be pursued for these same purposes?
- NNoN response: More coordination among various government agencies will help pool together all the resources available within the Government for an effective management of these resources.